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ABSTRACT

Eleven lessons for use in junior high school science present two major themes: (1) the use of tobacco, alcohol, and narcotics represents a serious danger to the health of individuals and to national welfare in general; and (2) the best way to combat dangers involved in the use of tobacco, alcohol, and narcotics is through an educated public. Each lesson is accompanied by references to texts and visual aids, learning activities, teacher information, and assessment items. The eleven lessons are: "Stimulants and narcotics are habit-forming drugs; The use and abuse of drugs has brought about the need for legal controls; Nicotine contains many harmful chemicals; Smoking irritates the eyes, reduces appetite, affects digestion, causes shortness of breath, and lowers endurance; Many studies exist which indicate that smoking may encourage the development of cancer in the lungs and other respiratory difficulties; Alcohol, acting as a depressant, affects the nervous system, slows down reaction time, and causes loss of coordination; Regular and excessive drinking of alcohol may result in a disease called alcoholism; Narcotics should be used only as prescribed by a physician; Victims of a drug habit become physically and mentally ill; The use of drugs is one of the most difficult habit to break; and A concerned person takes care of his body at all times." (JG)

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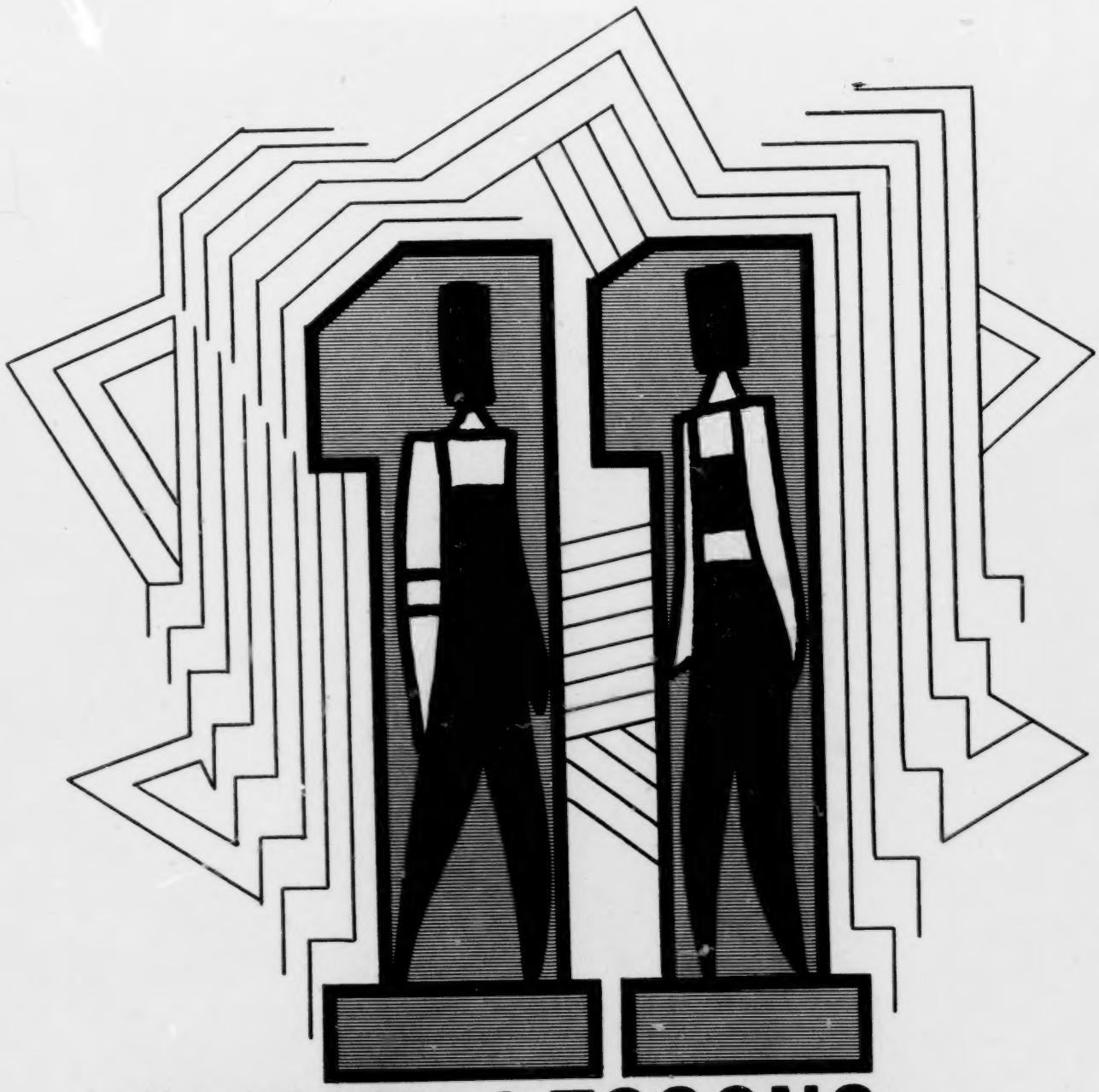

# ELEVEN LESSONS IN DRUG ABUSE EDUCATION

FOR USE IN JUNIOR HIGH SCHOOL SCIENCE

INSTRUCTIONAL PUBLICATION NO 4-8A

DADE COUNTY PUBLIC SCHOOLS

SE 011 061

# ELEVEN LESSONS IN DRUG ABUSE EDUCATION

for Use in

JUNIOR HIGH SCHOOL SCIENCE

1970

Instructional Publication 4-8A

Dr. E. L. Whigham, Superintendent of Schools
Dade County Public Schools

Miami, Florida 33132

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## PREFACE

The use of tobacco, alcohol, and narcotics in the United States, for reasons other than industrial or medicinal purposes, represents a serious threat to the health and well-being of the nation's citizens. A nation's most precious natural resource is its people, and the vitality of a nation is a reflection of the general state of health of the people. A population in poor health jeopardizes the security of the entire country. Scientific studies by thousands of responsible institutions and committees have shown these lurking dangers to be very real and not the figments of pessimistic imaginations.*

*Dade County Public Schools, Concepts for Junior High Science, Bulletin 8A (tentative), 1969, p. 10.

MAJOR THEMES

1. The use of tobacco, alcohol, and narcotics represents a serious danger to the health of individuals and to the national welfare in general.

2. The best way to combat the dangers involved by the uses of tobacco, alcohol, and narcotics is through an educated public.*

*Dade County Public Schools, Concepts for Junior High Science, Bulletin 8A (tentative), 1969, p. 10.

PRETEST

A. Match the items in the two columns to describe the effects of drugs and substances on the body.

| | | | |
|---|---|---|---|
| ___ | 1. stimulants | a. | slow down activity |
| ___ | 2. depressants | b. | induce calmness |
| ___ | 3. narcotics | c. | speed up activity |
| ___ | 4. hallucinogens | d. | produce stupor or sense of well-being |
| ___ | 5. tranquilizers | e. | develop toxic images |
| ___ | 6. substances | f. | cause distorted images |

B. Match the items in the two columns to show the characteristics of diseases frequently found in smokers.

| | | | |
|---|---|---|---|
| __ | 1. lung cancer | a. | Alveoli of lungs lose elasticity and are destroyed. |
| ___ | 2. Buerger's disease | b. | Constriction of coronary artery impairs heart muscle. |
| ___ | 3. emphysema | c. | Lesions develop in lining of area. |
| ___ | 4. coronary heart disease | d. | Persistent cough, with spitting up of blood, may be a symptom. |
| ___ | 5. stomach ulcer | e. | Circulation in extremities is disrupted and destroyed. |

C. Match the items in the following columns to show the meaning of terms related to drug and substance abuse.

| | | | |
|---|---|---|---|
| ___ | 1. tolerance | a. | physiological craving |
| ___ | 2. physical dependency | b. | discontinued use |
| ___ | 3. psychological dependency | c. | loss of effect unless the dosage is increased |
| ___ | 4. withdrawal | d. | emotional craving |

D. Choose the item which best completes the statement.

___ 1. Nicotine is--

a. a product whose effects are not known.
b. safe if a filter is used.
c. a destructive poison.
d. harmless if the smoker doesn't inhale.

___ 2. Smoking is a special hazard to teen-agers because it--

a. reduces the appetite.
b. depresses the central nervous system.
c. increases the ability to coordinate.
d. causes insomnia.

___ 3. Alcohol acts to--

a. stimulate thought.
b. depress the central nervous system.
c. increase the ability to coordinate.
d. cause insommia.

E. Write true or false next to the following statements.

___ 1. History tells us that drugs have been used for many centuries.

___ 2. The oldest drugs known to man are narcotics.

___ 3. The problem of addiction caused by opiates was first discovered in the United States during World War I.

___ 4. Modern drugs may be synthetic as well as natural.

___ 5. A pharmacist may manufacture and prescribe drugs.

___ 6. Self-diagnosis is very effective and saves money for the individual.

___ 7. Nonprescription drugs are illegal.

___ 8. Many bacterial and viral diseases have been conquered through the use of drugs.

___ 9. The Federal Trade Commission helps keep drugs safe.

___10. Alcohol, when abused, creates physiological dependence.

___11. Today a drug addict is considered ill.

___12. A person with problems of adjustment to society will never turn to drugs.

___13. Driving under the influence of drugs is dangerous.

## ANSWER KEY

A.
1 - c
2 - a
3 - d
4 - f
5 - b
6 - e

B.
1 - d
2 - e
3 - a
4 - b
5 - c

C.
1 - c
2 - a
3 - d
4 - b

D.
1 - c
2 - a
3 - b

E.
1 - T
2 - F
3 - F
4 - T
5 - F
6 - F
7 - F
8 - T
9 - T
10 - T
11 - T
12 - F
13 - T

LESSON 1

CONCEPT: Stimulants and narcotics are habit-forming drugs.

BEHAVIORAL OBJECTIVE: At the completion of the lesson the student will be able to define the terms used to group drugs and substances according the their effects on the body; namely, stimulants, depressants, hallucinogens, tranquilizers, narcotics, and volatile substances.

## SURVEY

1. What is a drug?
2. What is meant by habit-forming?
3. What is meant by each of these terms used to classify drugs: stimulants, depressants, hallucinogens, tranquilizers, narcotics, and volatile substances?

## REFERENCES

California State Department of Education, Drug Abuse: A Source Book and Guide for Teachers.

Smith Kline and French Laboratories, Drug Abuse: Escape to Nowhere.

## VISUAL AIDS

Filmstrip: THE PROBLEM OF DRUGS, INTRODUCTION. (Narcotics and background information) Raytheon Learning Systems Co.

## LEARNING ACTIVITIES

1. Make a list of terms used in grouping drugs according to their effects on the body.
2. Define each of the terms used in grouping drugs according to their effects on the body. Use your own words.

## ASSESSMENT

A. Match the items in the two columns.

| | | | |
|---|---|---|---|
| 1. | stimulants | a. | cause lethargy |
| 2. | volatile substances | b. | cause the seeing and hearing of things that aren't real |
| 3. | tranquilizers | c. | excite activity |
| 4. | hallucinogens | d. | induce calmness |
| 5. | narcotics | e. | induce stupor, dull pain |
| 6. | depressants | f. | build up poisons |

B. Write <u>true</u> or <u>false</u> next to each statement.

1. Stimulants produce a stupor.

2. Calming effects are produced by tranquilizers.

3. A drug that causes a feeling of continued need within the user is said to be a habit-forming drug.

4. A drug is a food that changes the structure and function of the body.

ANSWER KEY

A.
1. c
2. f
3. d
4. b
5. e
6. a

B.
1. F
2. T
3. T
4. F

Teacher Information, Lesson 1

The use of drugs in the United States for reasons that are neither medical nor industrial is a great threat to the health of citizens and the well-being of the nation.

A drug is a substance other than food that affects the structure and function of the body. Put another way, it is a substance used in diagnosis, cure, mitigation, treatment, or prevention of disease. According to their main effect on the body, drugs can be classified as stimulants, depressants, hallucinogens, tranquilizers, narcotics, and volatile substances. Drugs can be habit-forming. This means that the user develops a desire for the drug and may continue its use over a period of time, but experiences trouble with its discontinuance. If the use of the drug is continued until it becomes a health hazard and discontinuance is a great problem, the drug is classified as addicting.

The terms used to group drugs according to their effects upon the body are:

Stimulants — These are drugs that heighten organic activity. They induce excitement and sleeplessness.

Depressants — They decrease the vital activities of the body. They cause a lethargic condition.

Tranquilizers — They calm the body without producing sleep.

Hallucinogens — They cause one to experience sensations without any external cause. The individual sees, hears, or feels things that are not really there.

Narcotics — Narcotic drugs produce sleep, stupor, and relief from pain.

Volatile Substances — This group of solvents gives off harmful substances to which the body develops toxic reactions.

LESSON 2

CONCEPT: The use and abuse of drugs has brought about the need for legal controls.

BEHAVIORAL OBJECTIVES: At the completion of the lesson the student will be--

1. aware of the historical use and abuse of drugs;
2. aware of current methods of controlling abuse of drugs.

SURVEY

1. For what general purposes did early man use drugs?
2. Are any ancient drugs still in use today?
3. How has science played a part in drug development?
4. At what four levels of government is drug control organized?
5. What federal bureaus enforce the laws?
6. What part do Florida statutes play in drug abuse control at state level?
7. What Dade County departments are responsible for enforcement of drug laws?
8. Into what legal categories are various laws placed for the sake of rendering penalties?



LEARNING ACTIVITIES

1. Make a list of some ancient drugs and indicate if they are still in use today.
2. Write a report on a specific drug, covering its source and use.
3. Make a historical report concerning areas where early use of drugs has been found.
4. Write a paragraph showing how conditions of the times led to narcotic abuse in the United States.
5. Make a list of the main federal laws passed to control abuse. State what class of drug each concerns.
6. List the provisions of the Florida law concerning the possession and sale of narcotics.

## REFERENCES


Life Science Library, Drugs.

Pinellas County, Your Decisions: Information for Students on Narcotics and Dangerous Drugs.

Smith Kline and French Laboratories, Drug Abuse: A Manual for Law Enforcement Officers.

Smith Kline and French Laboratories, Drug Abuse: Escape to Nowhere.


## ASSESSMENT

A. Match the items in these columns.

| | |
|---|---|
| 1. Harrison Narcotic Act | a. control of illegal entry |
| 2. Drug Abuse Control Amendments | b. control of international under-world organizations |
| 3. Bureau of Customs | c. regulation of marijuana |
| 4. Florida Uniform Narcotics Drug Law | d. investigation of violation of federal drug laws |
| 5. treaties between nations | e. regulation of barbiturates and amphetamines |
| 6. Bureau of Narcotics and Dangerous Drugs | f. regulation of opiates |

B. Complete these statements.

1. The oldest drug is said to be _____.

2. An ancient drug still used today for medical diagnosis of the eye is _____.

3. Quinine came originally from _____.

4. During the Civil War there was an increase in the use of _____ for relief from pain of wounds and sickness among soldiers.

5. Early drugs were derived from natural sources, but today there are more _____ drugs than natural ones.

ANSWER KEY

A.

| | | |
|---|---|---|
| 1. | f | |
| 2. | e | |
| 3. | a | |
| 4. | c | |
| 5. | b | |
| 6. | d | |

B.

1. alcohol
2. belladonna
3. cinchona
4. narcotics, opiates
5. synthetic (or man-made or manufactured)

Teacher Information, Lesson 2

Drugs have been used from the beginning of man's stay on earth. They have served many purposes. They were used to treat sickness and disease, to relieve fatigue, to induce sleep, to relieve pain, and to induce euphoria. They were also used as a food. In many places they served a function in religious rites. People as far back as the Stone Age knew of opiates. The Greek physician Hipprocrates in the fourth century B.C. used the juice of the white poppy for a number of illnesses. Early Egyptians were also familiar with opiates. When South America was being conquered, natives were found using the coca leaf, which is now known to be a source of cocaine. Opiates have been used over thousands of years to kill pain and to induce euphoria. Alcohol is said to be the oldest drug, discovered probably by primitive man when some fruits fermented. It was used by Sumerians around 4000 B.C. Alcohol was the early anesthetic and opium the early pain killer.

Early civilization had many other drugs, some of which we still use today. Belladonna was used by ancient Romans. The ladies used it to dilate the pupils of their eyes to make them more beautiful. It is still used today to dilate pupils of the eyes for medical examinations and to relax muscles. An old drug is cinchona, which came from the powdered bark of a tree in Peru. Quinine, used to treat malaria, was extracted from cinchona. The Romans extracted a poison from the autumn crocus plant. Colchicine, for treatment of gout, comes from it. Some other drugs are aconite, and analgesic source; squill, a stimulant; henbane, a relaxant; epeca, an emetic; and digitalis, a stimulant.

Marijuana has also been used down through history. Before the third century B.C., Chinese were using the hemp plant. Great physicians prescribed it for many ills. It was known and used in Southeast Asia, the Middle East, Africa, South America, and North America.

The history of tobacco dates back to its use by the Mayans in religious ceremonies. The use of tobacco spread through Mexico to the American Indians. After the discovery of America, tobacco was brought back to Europe. Sir Walter Raleigh introduced the smoking pipe to the court of England. In its early use, smoking was considered to have some medical value.

Small amounts of opiates entered the United States in the early days. The volume increased greatly during the Civil War when soldiers needed relief from pain of wounds and from sickness. The invention of the hypodermic needle increased the use of narcotics and, in addition, patent medicines containing them became popular. Barbiturates were developed in Germany. Biochemists Joseph Von Mering and Emil Fisher produced the first ones in 1903.

Gradually the horrors of addiction were discovered. It reached a peak in 1915, at which time it was estimated that in the United States one person in every 400 was addicted. With this growing incidence of drug abuse evidenced, it was clear that controls were becoming necessary.

Treaties between nations have provided for border controls and customs inspections. These reduce illegal smuggling and help to check the international underworld organizations. In the United States, laws operate at federal, state, and local levels. In 1914, the federal government passed

the Harrison Narcotic Act. It regulated the manufacture, sale, and distribution of narcotics. The narcotics so controlled were the opiates and any of their derivatives or synthetics. Any drugs that have addiction-forming characteristics are included. Cocaine and marijuana are regulated by this law, but chemically they are not narcotics. This was done to abide by international treaty obligations. The law requires the registration of all those dealing in narcotics, controls order forms and record keeping, and levies special taxes. It sets up penalties for illegal possession and trafficking. Only if narcotic content is very low can the narcotics be sold without prescription. In these instances the amount must be limited and records of the sales must be kept. Penalties for illegal sale are a $20,000 fine and a prison term of from five to twenty years for the first offense. With additional offenses, the prison term increases. Illegal possession carries a fine and imprisonment of from two to five years. There is no parole or probation after the first offense.

Other federal legislation followed. It included the Marijuana Tax Act of 1937, the Narcotic Drugs Import and Export Act of 1942, the Opium Poppy Act of 1942, the Boggs Act of 1951, the Narcotic Drug Control Act of 1956, and the Drug Abuse Control Amendments of 1965.

Most of the states have passed uniform narcotic drug acts so that there are identical controls. Florida laws make possession, sale, and use of narcotics by unauthorized persons a felony. The drug must be prescribed by a licensed physician. Possession is punishable by imprisonment in a state prison up to five years and/or a fine of $5,000 for a first offense. The sale of narcotics is punishable by imprisonment up to ten years and/or a $10,000 fine. Repeated convictions can result in life imprisonment.

The Drug Abuse Control Amendments became federal law in 1965 and control barbiturates and amphetamines. This law requires wholesalers, jobbers, and manufacturers to register with the Food and Drug Administration. Records of all transactions must be kept by doctors, hospitals, and pharmacists. Prescriptions may not be refilled more than five times nor after six months from the date of the prescription. Only registered drug firms may manufacture these drugs, and they may be distributed only to those authorized to receive them.

The hallucinogenic drugs, such as LSD and DMT, were added to the Drug Abuse Control Amendments in 1966. Use was limited to medical investigations. Penalties for the first offense are a $1,000 fine and/or a year's imprisonment; for repeated offenses, fines as high as $10,000 and/or three years' imprisonment.

Control of nonnarcotic drugs in Florida is established through statutes. It is illegal to use stimulants and depressants unless under the supervision of a licensed physician. A violation is punishable as a felony. For the first offense there is a fine of not more than $1,000 or imprisonment for not more than two years.

Marijuana is controlled by the Uniform Narcotics Drug Law in Florida. Growing, possessing, or selling marijuana is prohibited, and a violation is punishable as a felony. A first conviction carries imprisonment for more than five years and a fine of not more than $5,000.

Use of volatile substances for smelling or inhaling fumes is prohibited, and violation is punishable as a felony. A first conviction carries imprisonment for not more than five years and a fine of not more than $5,000.

Illegal sale and use of LSD and hallucinogenic drugs is a felony, according to Florida statutes. Conviction can bring a fine of not more than $1,000 and/or imprisonment of not more than two years.

The enforcement agencies operate at federal, state, and local levels. The Federal Bureau of Narcotics and Dangerous Drugs was formed in 1968 by combining the Bureau of Narcotics (U.S. Treasury Department) and the Bureau of Drug Abuse Control (Department of Health, Education, and Welfare). Operating under the United States Department of Justice, this new bureau is charged with determining and investigating violation of federal drug laws. The Bureau of Customs, under the United State Treasury Department, controls illegal entry. Its agents, under international treaty, can search individuals and their goods for drugs.

Florida law is enforced through the Bureau of Narcotics of the State Board of Health. Dade County enforcement is handled through the Dade County Public Safety Department, the Dade County Health Department, and the police agencies of the twenty-seven municipalities within the county.

In early history drugs were derived from natural sources, but today many of the miracle drugs are synthetic. More than 90% of today's prescription drugs were discovered in the past twenty-five years. Some 800 drugs are used excessively in the United States.

## LESSON 3

CONCEPT: Nicotine contains many harmful chemicals.

BEHAVIORAL OBJECTIVES: At the completion of the lesson the student will be able to identify the many harmful chemicals in nicotine that make smoking tobacco dangerous and destructive.

### SURVEY

1. What is the nature of some of the chemicals involved in nicotine?
2. How have experiments on animals demonstrated the potency of nicotine?
3. How does the burning process affect the matter that is found in tobacco?
4. How does smoke enter the body?
5. What effect does inhalation have upon the amount of nicotine entering the body?
6. Is smoking safe if the smoker doesn't inhale?

### LEARNING ACTIVITIES

1. Develop a list of some destructive chemicals in nicotine and indicate how potent they are.
2. State two ways in which nicotine enters the systems of the body. Indicate how much nicotine enters.
3. Draw and label the parts of the two body systems through which smoke enters the body.
4. Prepare some information on nicotine for a bulletin board display.
5. State some figures that show that the number of smokers has increased drastically over the years.
7. Make a graph indicating how smoking affects life expectancy.
8. Investigate how protozoa are affected by a solution of tobacco and water.

## REFERENCES


Florida State Board of Health, Smoking and Health, Teacher Guide, Fifth and Sixth Grade, (Appendix 1 and 2 contains experiments).

Ochsner, Alton, M.D., Smoking and Your Life.

Washington State Office of Public Instruction, Smoking and Health, Guide for Elementary and Secondary Schools.


## ASSESSMENT

Write true or false next to the following.

1. Nicotine is one of the most powerful poisons known.
2. It is the tar in tobacco that acts to make smoking habitual.
3. Smoking is harmless if one does not inhale.
4. Only the respiratory system brings the harmful products of smoking into the body.
5. The great heat involved in burning tobacco is responsible for the very great number of chemical changes that occur.
6. Filters make smoking safe.
7. The longer smoke stays in the mouth and the deeper the inhalation, the greater is the amount of poison that enters the body.
8. A heavy smoker may feel physically ill when he wants a smoke and can't get it.
9. There are no mental repercussions when tobacco is withdrawn.
10. Studies made of various diseases show that the death rate is higher for smokers than for non-smokers.

### ANSWER KEY

| | | | |
|---|---|---|---|
| 1. | T | 6. | F |
| 2. | F | 7. | T |
| 3. | F | 8. | T |
| 4. | F | 9. | F |
| 5. | T | 10. | T |

Teacher Information, Lesson 3

Nicotine is a colorless liquid that turns brown when exposed to air. It is an alkaloid that acts as a stimulant and an irritant. It is extremely toxic, being one of the most rapid and fatal of the poisons. It is used as a pesticide and is sprayed on the tobacco plant to protect it from insects.

There are about three hundred known chemicals that exist in tobacco smoke. There are innumerable compounds of nicotine. Substances burning in a cigarette reach temperatures as hot as 610 degrees C. or more. The higher the temperature the more chemical changes occur. A few of the products are carbon monoxide, nitrogen dioxide, arsenic, formaldehyde, acrolein, phenol, hydrogen cyanide, hydrocarbons, tars, and waxes.

During the burning process, these drugs enter the body. How much nicotine is absorbed from one cigarette depends on how long the smoke remains in the mouth, whether it is inhaled, and the frequency and depth of inhalation. A tremendous amount of nicotine is taken in without inhalation. Most of the nicotine is absorbed in the respiratory passages. Some is absorbed by the saliva and is swallowed.

One grain of nicotine taken orally is fatal; one pack of cigarettes a day contains enough poison to kill if taken all at once. A normal-sized inhalation contains enough nicotine to kill, except for the protection given the body by enzymes. Vapors arising from a glass rod moistened with nicotine and brought near a small bird will cause it to drop dead. Two drops of nicotine on the gums of a dog will cause the death of the dog. Nicotine on the wall of an animal's intestines acts like lye.

In a cigarette, thirty-five percent of the nicotine is burned off by the flame. Another thirty-five percent escapes through the paper, and twenty-two percent enters the mouth. When smoke is held in the mouth for two seconds, sixty-six to seventy-seventy percent of the nicotine is absorbed. When smoke is inhaled, the percentages increase to eighty-eight to ninety percent.

Manufacturers claim that the filter tips and the king-sized cigarettes cut down on the nicotine and tar. It has been proved that they do a very inefficient job. In many instances the filter tip delivers more of both. Between brands and kinds, there are many inconsistencies. A filter tip may deliver more poisons, since the smoker is inclined to smoke it down to a shorter butt than he would without the tip. This is the area where the harmful substances concentrate. To benefit by the filter (granting that it may do some good) an extra length of the cigarette must be left unsmoked. The effectiveness of filters in removing nicotine and tar is not enough to be of clinical significance.

In all the studies made of various diseases, it was found that the death rate is higher among smokers than nonsmokers. Death rate increases with the amount of smoking; the smoker of ten cigarettes a day has a forty percent increase over nonsmokers, ten to nineteen a day an increase of seventy percent, twenty to thirty-nine a day an increase of ninety percent, and forty and above a day, an increase of one hundred and twenty percent.

For the smoker it is nicotine that puts pleasure into smoking. Tobacco can be grown that is nicotine-free; however, it does not satisfy the customer. Nicotine is classified as a habit-forming drug. Through its repeated use, an automatic response to it is developed. In addition the user tends to increase the amount used. It is said that heavy smokers and chain smokers are very close to addiction. The body physically insists upon having it. When the cigarette is missing, the smoker panics, he sweats, his speech becomes slovenly, and his palms itch. There is breathing difficulty, pain, tension, and depression.

Statistics show that in 1910 the consumption in the United States was 138 cigarettes per capita. In 1967, it had increased to 4,280 per capita. It is an expensive habit: in 1965, 8.5 billion dollars were spent on tobacco. This is equivalent to $43 for each of the 200,000,000 people in the United States. To break the habit, it must be replaced with a new, more desirable one. No exceptions must be permitted.

There are few laws to regulate smoking. A beginning has been made in that all cigarette packages must now be marked "Caution, cigarette smoking may be hazardous to your health."

The amount of harm done by smoking depends upon many factors: the composition of the tobacco (cheap tobacco burns hotter and is therefore more harmful), the method of smoking it, the quantity smoked, the amount and depth of inhalation, and the length of time the smoke remains in the mouth or lungs. The abnormal conditions that result are often reversible. When the individual stops smoking, the abnormal conditions disappear over a period of time.

## LESSON 4

CONCEPT: Smoking irrates the eyes, reduces appetite, affects digestion, causes shortness of breath, and lowers endurance.

BEHAVIORAL OBJECTIVE: At the completion of the lesson the student will be able to classify the effects of the use of tobacco upon the functions of the systems of the body.

### SURVEY

1. In what ways does smoking interfere with sight?
2. Why does smoking destroy the taste of food?
3. How does smoking affect appetite, digestion, and nutrition?
4. What effect does the destruction of proteins by tobacco have upon the tissues?
5. How does smoking by parents affect the newborn infant?
6. How do cilia work to protect the respiratory system?
7. What factors concerning the respiratory system bring about shortness of breath when tobacco is used?
8. How are the heart and blood vessels affected by smoking?
9. How does smoking handicap endurance and efficiency?

### LEARNING ACTIVITIES

1. List the organs whose functions are adversely influenced by smoking tobacco.
2. State how each of the organs listed in number 1 is affected by tobacco.
3. Discuss how dimness of vision and peripheral vision are affected by tobacco.
4. Disprove the statement "Smoking improves digestion."
5. Write a few statements concerning how parents' smoking influence the newborn infant.
6. Indicate the effects of smoking on the heart, blood vessels, and blood pressure.
7. Discuss why smoking is a special hazard to teen-agers.
8. Make a list of factors related to smoking that influence efficiency and endurance.

## REFERENCES


Ochsner, Alton, M. D., Smoking and Your Life.

U. S. Department of HEW, Washington, D. C., Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health.

Washington State Office of Public Instruction, Smoking and Health, Guide for Elementary and Secondary Schools.


## VISUAL AIDS

Film: TOO TOUGH TO CARE.

## ASSESSMENT

Fill in the blank with either the word increases or decreases.

1. Smoking _____ the heart rate.
2. Smoking _____ the skin temperature.
3. Smoking _____ the blood pressure.
4. Smoking _____ the appetite.
5. Smoking _____ shortness of breath.
6. Smoking _____ endurance.
7. Smoking _____ an athlete's ability to perform.
8. Smoking _____ the size of small blood vessels.
9. Smoking _____ hunger contrictions.
10. Smoking _____ peripheral vision.
11. Smoking _____ blood sugar level.
12. Smoking _____ secretion of hydrochloric acid.
13. Smoking _____ food intake.
14. Smoking _____ efficiency of the respiratory system.
15. Smoking _____ nervous tension.

## ANSWER KEY

| | | | |
|---|---|---|---|
| 1. | increases | 9. | decreases |
| 2. | decreases | 10. | decreases |
| 3. | increases | 11. | increases |
| 4. | decreases | 12. | increases |
| 5. | increases | 13. | decreases |
| 6. | decreases | 14. | decreases |
| 7. | decreases | 15. | increases |
| 8. | decreases | | |

Teacher Information, Lesson 4

Smoking irritates and interferes with proper functioning of the organs of the body.

It has long been known that smoking affects the eyes. A dimness of vision is caused that cannot be explained by organic lesion. It is associated with pipes and cigars more than with cigarettes. A vitamin B deficiency makes the retina or optical nerve oversensitive to the smoke and causes the differential brightness threshold to be lowered. A level of carboxyhemoglobin of five percent is not uncommon in heavy smokers. Depression of visual perception is caused by a lack of oxygen in the blood and an increase in carbon factors. Smokers at altitudes of 8,000 to 10,000 feet experience this lowered perception, along with lightheadedness, nausea, and fuzzy peripheral vision. The vision horizon is narrowed.

Smoking does not make food taste better. It depresses the taste buds, and the sense of taste and also of smell are dulled. Tobacco tastes bitter, and manufacturers disguise this by adding flavoring. It is the heat of the smoke that deadens the taste buds; tobacco smoke is hotter than the hottest liquids that are taken into the body.

People who smoke eat less. Nicotine decreases the gastric hunger contractions which are nature's way of signaling the body's need for food. The blood sugar level in the body is lowered. The smoker may feel dizzy, apprehensive, and uncertain. He may experience heartburn, flatulence, excessive belching, and nausea. With decreased appetite there results an increased thirst, and the

individual may take to using high-caloric drinks. Less appetite, combined with more fluids, reduces the amount of vitamins and minerals. Three cigarettes a day will counteract the daily vitamin C ration; a deficiency in nutrition results. Smokers live on fewer calories and, therefore, gain weight when smoking is stopped. Slimness derived from this method is not a healthy state.

The nicotine, tar, and resins that reach the stomach through the saliva affect digestion. The gastric mucous is irritated. There results a profuse secretion of hydrochloric acid, and the stomach's lining becomes congested. The duodenum is likewise affected. Acid indigestion and heartburn may result. As the gastric flow increases the constriction of blood vessels, it affects the blood supply not only in the stomach but also in the colon. At the same time the blood supply decreases, motility increases. The colon becomes irritated; spastic constipation or diarrhea may result. Acetaldehyde in cigarette smoke combines with protein so fast that the action begins as soon as smoke enters the lungs. This causes the connective tissue of bone, skin, blood vessels, and lungs to stiffen just as tissues do in the aging process.

One of the early signs of injury to the respiratory system is a cough. The system has an extraordinary cleaning system. The tubes are lined with a mucous layer and cilia. The constant motion of the cilia keeps out foreign particles. If particles cannot be whipped out, the body changes their chemistry to something less harmful or encases them in a protective covering so the body can react to them more slowly. The nicotine depresses the cilia and interferes with these protective measures. The irritants settle in the tubes. It can result in a cough, bronchitis, pharyngitis, and laryngitis. The areas are vulnerable to infection, the voice becomes hoarse, and the clogged passages mean breathlessness.

The heart rate and blood pressure are increased by smoking. The heart may average ten beats a minute more than the heart of the nonsmoker. A speedup of twenty to fifty extra beats per minute is possible, and the effect of one cigarette can last from ten to thirty minutes. The rhythm of the heart beat may also be changed. It has been shown that the slow heart rhythm and slow pulse may make for longer life.

The effect of the nicotine is also felt on the blood vessels; they become constricted. The flow of blood in the skin is decreased and the temperature may drop as much as six degrees centigrade. The condition can last as long as thirty-five to forty minutes. A spasm can occur in small arteries of the extremities. These arteries become plugged, and circulation is seriously hampered.

Constriction of the coronary vessels reduces the blood supply to the heart muscle. This puts a startling stress on the normal heart. Chest pains, faintness, and difficulty in breathing result. A definite linkage exists between smoking and heart ailments.

Nicotine lowers the activity of the forebrain. As a result, inhibitions are removed and the individual feels more relaxed. It stimulates the posterior portion of the pituitary gland. This interferes with the normal formation of urine in the kidneys. It stimulates the smooth muscles of the uterus and may be involved with premature birth. New infants tend to be underweight when the father smokes, even though the mother does not. Nerves take a beating from nicotine. Ganglionic poison may form in the nerve cells; nervous tension increases and insomnia may result.

In the performance of physical activities, endurance is essential. Good endurance depends upon proper function of the organs of the body. With increased activity the body must have more oxygen delivered to its parts and extra waste materials carried away. There is a needed increase in the function of the circulatory and respiratory system. If these systems are already overloaded from the effects of smoking, endurance suffers. Carbon monoxide, a product of smoking, interferes with the ability of hemoglobin in the blood to carry oxygen. Nicotine constricts the vessels and slows down the blood supply. The heart action meanwhile speeds up and carries an extra burden. Endurance and efficiency are handicapped. Reaction time is slower.

There is scarely a biological process that is not disturbed by smoking. There is an extra hazard for teen-agers. Smoking reduces efficiency and stamina. With reduced appetite, there is a loss in weight. Growth, therefore, is affected and the well-being of the user can be greatly disturbed.

LESSON 5

CONCEPT: Many studies exist which indicate that smoking may encourage the development of cancer in the lungs and other respiratory difficulties.

BEHAVIORAL OBJECTIVE: At the completion of this lesson the pupil will be able to identify how smoking brings about structural changes in the body that result in the development of serious and killing diseases.

## SURVEY

1. What is cancer? What are carcinogens?
2. How does cigarette smoke cause lung cancer? What are its symptoms?
3. What part do cigars, pipes, and filters play in causing cancer?
4. What are the characteristics and symptoms of emphysema? How does smoking cause it?
5. How does smoking bring about coronary heart disease?
6. What is Buerger's disease? How does it develop?
7. How are uclers of the stomach and the duodenum caused by smoking?

## LEARNING ACTIVITIES

1. Compile a separate report on each of the diseases of the circulatory, respiratory, and digestive systems that are caused by tobacco.
2. Diagram one of the above systems. Label each part with the name of the disease that can occur.
3. Make a graph which compares the incidence of these diseases found in smokers and in nonsmokers.
4. Make a poster or cartoon to illustrate a harmful effect of smoking.
5. Make a graph to show how smoking has increased over the past fifty years.

## REFERENCES


Lieb, Clarence W., M. D., Don't Let Smoking Kill You.

Ochsner, Alton, M. D., Smoking and Your Life.

U. S. Department of HEW, Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health.

Washington State Office of Public Instruction, Smoking and Health, Guide for Elementary and Secondary Schools.


## VISUAL AIDS

Films: SMOKING AND LUNG CANCER.
TOO TOUGH TO CARE.

## ASSESSMENT

A. Match the items in the the two columns.

| | | | |
|---|---|---|---|
| 1. | Carcinogens | A. | Disease of the heart muscle |
| 2. | Cancer | B. | Lesions in stomach |
| 3. | Emphysema | C. | Uncontrolled growth of cells |
| 4. | Buerger's disease | D. | Cancer-causing chemicals |
| 5. | Stomach ulcer | E. | Affects circulation of the extremities |
| 6. | Coronary disease | F. | Inability to breathe properly |

B. Fill in the blanks in the following.

1. Cancer of the mouth, lips, and tongue may be caused by _____.

2. One of the chemicals in tobacco that destroy tissue is _____.

3. _____ is a disease in which the alveoli of the lungs lose their elasticity.

ANSWER KEY

A.
1 - d
2 - c
3 - f
4 - e
5 - b
6 - a

B.
1. cigars, pipes, or chewing tobacco

2. nitrogen dioxide, formaldehyde, acrolein, phenol, or tars

3. emphysema

Teacher Information, Lesson 5

Smoking does more than cause the malfunctioning of body organs. It disrupts the structure, with certain resultant diseases. Some of the chemicals that destroy the tissue are nitrogen dioxide, formaldehyde, acrolein, phenol, and tars. They are called carcinogens, because of their cancer-causing reaction on cells. Cancer is a disease in which uncontrolled growth of cells smothers out the normal cells, resulting in a tumor. The destruction can gradually spread by sending out branches to other parts of the body to form new tumors. This spreading is called metastasis. Cancer was known 3,500 years ago, and was named karkinos by the Greeks in the fourth century.

Cancer of the respiratory tract has as its symptoms a cough, audible breathing, blood in the sputum, loss of appetite, loss of weight, weakness, pain in the chest, a change in voice, and difficult breathing. The disease is encountered at a higher incidence in smokers than in nonsmokers. It is more prevalent in smokers who have smoked for twenty-five years or longer. It has also been steadily increasing as smokers smoke more. In 1920, the average American smoked 611 cigarettes a year. In 1930, when the average number of cigarettes smoked rose to 1,365, there were 2,357 deaths reported from lung cancer. In 1963, when the average number of cigarettes smoked increased to 4,000, deaths from lung cancer reached 40,000.

Cancer is caused also in the lips, tongue, mouth, esophagus, and larynx. Cigars, pipes, and chewing tobacco are guilty here. If cigar and pipe smokers inhale, however, the chance of lung cancer is even greater than among cigarette smokers. Among pipe and cigar smokers, the death rate from

cancer is one-third more than that of the nonsmokers; among heavy cigarette smokers it is 1.5 times more. The swallowing of the tobacco components in the saliva causes ulcers of the stomach and duodenum. These ulcers will not heal as long as the patient smokes or chews tobacco but will improve when he stops. The incident of ulcer is 2.8 times higher in the smoker than in the nonsmoker.

Another disease caused by smoking is emphysema. It is a disease in which the alveoli of the lungs distend. They lose their elasticity, the walls rupture, and a number of air sacs become one. They can no longer properly contract and expand during inspiration and expiration. The condition keeps spreading. Symptoms are inability to breath properly, increase in breathing rate, breathlessness, sluggishness, annoyance, and moodiness. There are chest pains and lack of proper oxygenation of the body in general. The heart becomes involved in that it must beat faster to try to supply enough oxygen to the body. Chronic bronchitis, another respiratory disease, is an inflammation of the bronchial tubes. The tubes become narrower, changes occur in the mucous, and there is a spasm in the muscular layer. It may occur with or without emphysema. The rate of death from emphysema and bronchitis is 6.1 times higher in smokers than in nonsmokers.

Smoking has serious effects upon the heart and blood vessels. Coronary heart disease is a disease of the heart muscle. It may be brought on when the heart, as a result of smoking, must strain itself to properly supply the body with blood. There is tension and high blood pressure. At the same time the coronary artery is constricted so that the heart muscle itself lacks the necessary blood supply. The overload from smoking can thus bring on

a heart attack and death. Coronary artery disease is 1.7 times higher in the smoker than in the nonsmoker. The figure for hypertension is 1.5 times higher. Angina is also brought about by inadequate circulation in the heart muscle, and it can be caused by the overuse of tobacco. Symptoms are pain in chest and arm, faintness, and difficulty in breathing.

If muscles to the brain are affected by arteriosclerosis, the extra contractions brought about by smoking may cause stroke. Buerger's disease is a disease of the circulatory system that affects the vessels of the extremities. The small arteries become constricted. The constriction is indicated by a drop in skin temperature. As it continues, circulation of the whole extremity may become reduced. Gangrene sets in and amputation becomes necessary. This disease is exceedingly rare. It is practically nonexistent in people who do not smoke.

LESSON 6

CONCEPT: Alcohol, acting as a depressant, affects the nervous system, slows down reaction time, and causes loss of coordination.

BEHAVIORAL OBJECTIVE: At the completion of this lesson the student will be aware of the effects of alcohol on the central nervous system.

| SURVEY | LEARNING ACTIVITIES |
|---|---|
| 1. What is the central nervous system? | 1. Show how alcohol depresses the brain. |
| 2. Why do we need to be concerned of the central nervous system is disturbed? | 2. Write a paragraph that shows how alcohol enters the body and how it is removed. |
| 3. Why is alcohol classified as a drug? | 3. Discuss how euphoria affects the actions of the individual. |
| 4. How do laws limit its use? | 4. Show how alcohol affects the voluntary muscular system of the body. |
| 5. How does alcohol move through the body? | 5. List the faculties of the brain that are affected by alcohol. |
| 6. What three general effects does alcohol have upon the body, depending upon the amount of intake? | |
| 7. What faculties of the brain are affected? | |
| 8. How are coordination and reac-ion time involved? | |
| 9. Why is speech affected? | |
| 10. How does alcohol affect fatigue? | |

## REFERENCES


Bier, William C., Problems in Addiction: Alcoholism and Narcotics.

Pittman, David J., Alcoholism, Washington University, St. Louis, Mo.

Todd, Frances, Teaching About Alcohol.


## ASSESSMENT

Identify the statements as true or false.

1. Alcohol is a drug that acts as an immediate depressant.
2. Anyone can legally buy or drink alcohol.
3. Alcohol's first effect is upon the brain.
4. The bloodstream carries alcohol through the body.
5. The liver oxidizes alcohol and removes it from the body.
7. Understanding and concentration are among the first abilities to be adversely affected.
8. Alcohol overcomes fatigue.
9. Alcohol increases self-control.
10. Skill in performance is increased by alcohol.

### ANSWER KEY

| | |
|---|---|
| 1 - F | 6 - F |
| 2 - F | 7 - T |
| 3 - T | 8 - F |
| 4 - T | 9 - F |
| 5 - T | 10 - F |

Teacher Information, Lesson 6

Alcohol is classified as an alcoholic beverage and a drug. Its use generally is accepted by society. Laws deal with its manufacture, sale, and possession. Its sale to and use by a minor is illegal. Law regulates the amount of alcohol in the blood for classification of drunk drivers. How much alcohol a person can tolerate depends on individual characteristics which relate to the amount of alcohol in the blood. It also relates to the kind of person involved. One who is normally self-controlled is less affected than one who is less controlled. In small doses alcohol acts as a sedative; in larger doses it acts as an analgesic. Increased amounts lead to a hypnotic, narcotic sleep-producing stage.

In the body, alcohol is absorbed into the bloodstream in the stomach and the duodenum, then distributed through the body. It affects first the organs that have a large blood supply. These are the brain, the kidney, and the liver. For the most part, the liver handles the removal of alcohol from the body. Small amounts are removed by the kidneys and lungs. In the liver it is oxidized and broken into carbon dioxide and water at the rate of about three-quarters of an ounce per hour. There is no other process by which this removal can be speeded up.

Alcohol affects the central nervous system. The highest centers of the brain are affected first. Alcohol can be found in the brain one-half minute after intake. The centers that control thought, reasoning, and judgment are affected first, with interference in concentration, understanding, and memory.

Inhibitions are released; self-control is lost. The individual no longer sees himself as others see him. Worries disappear and he is in a state of euphoria. Since judgment influences sight and touch, they are also impaired.

Alcohol deters muscle coordination in the voluntary muscle system; therefore, coordination and efficiency are affected. Speech becomes slurred and equilibrium is disturbed. Skill in performance decreases. Unfamiliar skills are more readily affected than familiar ones. With decrease in efficiency, reaction time is slowed. Two drinks will lower reaction time by one-third.

Alcohol does not overcome physical or mental fatigue. The individual has a false feeling of well-being when what he actually needs is rest.

LESSON 7

CONCEPT: Regular and excessive drinking of alcohol may result in a disease called alcoholism.

BEHAVIORAL OBJECTIVE: At the completion of this lesson the student will recognize structural changes resulting in serious and death-causing diseases which are considered the result of excessive use of alcohol.

SURVEY

1. Why is it said that the organs of the body are indirectly affected by alcohol?

2. What is cirrhosis of the liver? How does it develop?

3. How does the use of increased amounts of alcohol affect digestion?

4. How are the heart, vessels, and blood pressure influenced by alcohol?

5. What is the difference between chronic alcoholism and being an alcoholic?

6. What are the withdrawal symptoms in the alcoholic?

7. What are the diseases of alcoholism that develop in the brain and nervous system? What are the symptoms of each?



LEARNING ACTIVITIES

1. Put an egg white into alcohol. Let it stand. What are the results? Interpret them in terms of the human body.

2. Place a green leaf in alcohol. Let it stand. Explain what happens.

3. Make a list of the organs of the body disrupted by alcohol. Indicate after each what symptoms and diseases occur.

4. Make a list of the diseases that result from alcoholism and give the symptoms of each.

5. Indicate with the use of figures how drinking alcohol can affect the family budget.

## REFERENCES


Bier, William C., Problems in Addiction: Alcoholism and Narcotics.

Pittman, David J., Alcoholism, Washington University, St. Louis, Mo.

Todd, Frances, Teaching About Alcohol.


## ASSESSMENT

Complete these statements.

1. Alcohol destroys vitamin _____ in the liver.
2. Three organs first influenced when alcohol is taken are _____, _____ and _____.
3. Large amounts of alcohol cause the heartbeat to _____.
4. The extremities become _____ during intoxication.
5. Alcohol is contributory to cancer of the _____.
6. _____ _____ is a disease of alcoholism that affects the brain.
7. Polyneuritis can cause the hands and feet to become _____.
8. Withdrawal symptoms are _____, _____, and _____.
9. Excessive alcohol in the stomach causes inefficient digestion and _____.
10. Alcohol is a central nervous system _____.

### ANSWER KEY

1. B
2. brain, liver, and kidneys
3. increase
4. cold
5. liver
6. delirium tremens
7. paralyzed
8. blackouts, extreme tremors, and hallucinations
9. malnutrition
10. depressant

Teacher Information, Lesson 7

The central nervous system and many organs of the body are adversely affected by alcohol.

Extensive use of alcohol disturbs the function of the liver. It becomes swollen and inflamed during drinking. If drinking is a chronic habit, the condition is permanent. Liver cells are damaged, and finally fatty degeneration sets in. The liver shrinks and becomes hard, and cirrhosis, or cancer of the liver, results. This may be caused in part by dietary deficiency, since alcohol destroys the vitamin D in the liver. Cirrhosis was tenth among the causes of death in 1962. Smoking in conjunction with excessive use of alcohol appears to have an effect. Death rate of sclerosis of the liver is 220 percent higher among smokers than nonsmokers.

The impact on the pituitary gland causes it to send antidiuretic secretion to the kidney. This tends to overwork the kidney. Thus, in chronic drinking, the amounts of mineral elements, salts, acids, and bases in the blood are disturbed. The body becomes overly alkaline, which can be harmful.

Since the flow of gastric juices is increased by the intake of alcohol, gastritis results. Ulcers are greatly aggravated by this process. Great amounts of alcohol slow up digestion, which becomes inefficient, and malnutrition results. Over a long period of time, nutritional problems can lead to permanent degeneration of the nervous system.

The pulse rate, heartbeat, and blood pressure are increased by alcohol. The heart is affected indirectly through the nervous system. The blood pressure first increases, then is depressed, which leads us to recognize that alcohol is a central nervous system depressant. At first alcohol extends the vessels of the face and the extremities, and there is a feeling of warmth. Then the vessels become constricted, the temperature drops, and the person becomes chilled. In intoxication the extremities are cold, the face is pale, and circulation is inhibited.

Long-term use of alcohol causes chronic alcoholism. The individual has a need for alcohol that cannot be denied, and he is then considered ill. It is now accepted that alcoholism is a disease that interferes with the physical, personal, and social life of the addict. Tolerance develops so that more and more alcohol is needed. When it is not provided, withdrawal symptoms appear--blackouts, hallucinations, and extreme tremors. Medical help is needed to cure the problem.

There are several diseases of the nervous system that develop as a result of alcoholism. One is delirium tremens, in which the individual is mentally deranged. He has hallucinations--he sees and feels things that are not there. Often he injures himself physically while in this state. Karsakoff's psychosis follows delirium tremens; it is characterized by mental illness, confusion, and poor memory. Another disease of the nervous system is polyneuritis; the hands and feet have a burning sensation and finally become paralyzed. The effects of Warnick's syndrome are a dull mind, brain hemorrhage, paralyis of eye muscles, and poor muscular coordination. It is caused by malfunction of metabolism in the brain.

Excessive use of alcohol with its associated deterioration of structures and functioning in the human body can obviously shorten the individual's life span.

LESSON 8

CONCEPT: Narcotics should be used only as prescribed by a physician.

BEHAVIORAL OBJECTIVES: At the completion of this lesson the student will--

1. be aware of the use and abuse of drugs;
2. recognize the need for control of drugs through laws.

## SURVEY

1. Quote some figures that show that life expectancy has increased.
2. Who are the individuals medically trained and legally certified to prescribe drugs and to dispense drugs?
3. What is the difference between prescription and nonprescription drugs?
4. How do you know how to use nonprescription drugs?
5. Why can self-diagnosis and self-medication be harmful?
6. How do laws safeguard persons against drug abuse?

## REFERENCES


Bauer, Eta, Health for All, Book 8, Teachers Edition. Curriculum Foundation Series.

Dade County Public Schools, Information Bulletin, Drug Abuse Education for Junior High Schools.


## LEARNING ACTIVITIES

1. Make a list of those who legally prescribe and dispense drugs and indicate the function of each.
2. Examine a label on a prescription drug bottle and list what information it gives.
3. Examine a label on a nonprescription drug bottle and list what information it gives.
4. Identify some killing diseases that have been conquered by medical research and drugs.
5. List some diseases that man is still researching.
6. Name several important laws that protect man from unsafe and impure drugs.

## ASSESSMENT

A. Identify the statements as true of false.

1. Drugs obtained by prescription can never be dangerous.

Johnson, George, The Pill Conspiracy

Life Science Library, Drugs.

2. A nurse may prescribe for her patient.

3. Drugs may perform miracles when properly prescribed and administered.

4. The Federal Trade Commission investigates the safety and effectiveness of drugs.

B. Complete the statements.

1. Virus-caused diseases that no longer need to be feared are _____ and _____.

2. Bacteria-caused diseases that have been conquered are _____ and _____.

3. Two diseases on which research is still very actively in progress are _____ and _____.

C. Choose the item that best completes each statement.

1. The disease which has not yet been conquered is
   a. measles
   b. diphtheria
   c. mumps
   d. the common cold

2. drugs cannot legally be prescribed by a
   a. doctor
   b. psychiatrist
   c. pharmacist
   d. dentist

3. Nonprescription drugs should be used
   a. in unlimited amounts
   b. for a short time only
   c. after careful self-diagnosis
   d. in combination with alcohol

ANSWER KEY

A. 1 - F
2 - F
3 - T
4 - F

B. Student Choice

C. 1 - d
2 - c
3 - b

Teacher Information, Lesson 8

Statistics show that life expectancy has increased by more than seven years since 1940. In the early part of this century, an individual could expect to live to be forty-seven years old as contrasted with an expectancy of seventy years today. Development of new drugs and more efficient use of older drugs to help maintain good health have contributed much to this accomplishment.

Death rates have dropped as bacterial and viral diseases have been brought under control. Death rates from these diseases are down 70 to 90 percent. New drugs affecting the mind have improved mental health. Now two-thirds of all mental patients are discharged from institutions within a year, while twenty years ago most could expect to be confined for life. Antibacterial drugs now control diphtheria, meningitis, scarlet fever, cholera, typhoid fever, tetanus, dysentery, leprosy, tuberculosis, and wound infections. Antiviral drugs control smallpox, rabies, polio, influenza, mumps, and measles. Science is still working to conquer cancer, arthritis, cerebral palsy, muscular distrophy, heart and artery diseases, the common cold, and others.

Only properly trained and licensed individuals may legally prescribe and dispense drugs. Drugs are prescribed by doctors of medicine, including psychiatrists, and dentists. The prescriptions are filled by pharmacists. It is unlawful to sell prescription drugs without a legal prescription. Nonprescription drugs must be properly labeled. Drug advertisements are supervised

by the Federal Trade Commission. The Federal Food and Drug Administration investigates the safety and effectiveness of drugs before they can be sold.

Only doctors should diagnose and treat disease. There is no drug with one single use and exact effect on everybody. People react differently, and dangerous side effects may occur from drugs. Drugs can cause serious changes in the structure and function of vital organs. The good must be weighed against the harm that a drug can do for each individual. Nonprescription drugs lead to unscientific self-diagnosis and delay the seeking of needed professional help. They should be used only for a short time. Some drugs combined with others become lethal. Barbiturates and alcohol used together are an example.

LESSON 9

CONCEPT: Victims of a drug habit become physically and mentally ill.

BEHAVIORAL OBJECTIVE: At the completion of this lesson the student will be able to identify the effects of drug abuse on man's body for each of the following: amphetamines, barbiturates, tranquilizers, LSD, volatile substances, marijuana, and heroin.

SURVEY

1. What is meant by drug abuse?

2. How does each abused drug or substance affect the individual physically and psychologically?

LEARNING ACTIVITIES

1. Develop the following chart:

| DRUG | PHYSICAL EFFECTS | PSYCHOLOGICAL EFFECTS |
|---|---|---|
| amphetamines | | |
| barbiturates | | |
| tranquilizers | | |
| LSD | | |
| volatile substances | | |
| marijuana | | |
| heroin | | |

2. Group the physical and psychological effects for each class of drugs so as to show progressive stages of deterioration.

## REFERENCES


Bowen, Haskel L. Drug Facts

Curtis, Lindsay, M. D., Glue Sniffing

_____, Let's Talk About Goof Balls and Pep Pills,

_____, Why Not Marijuana?

NEA, "Today's Education," Journal of NEA. March 1969.

Smith Kline and French Laboratories. Escape to Nowhere


## VISUAL AIDS

Films:

MARIJUANA
THE LOSERS
HOOKED

Filmstrips: (Raytheon Learning System)
BARBITURATES AND AMPHETAMINES, PARTS II, III.
MARIJUANA, PARTS IV, V.
LSD, PARTS VI, VII.
NARCOTICS, PART VIII.

## ASSESSMENT

Fill in the blanks in the sentences.

1. Chromosome damage is caused by _____. This is a _____ effect.

2. _____ cause damage to cells of brain, liver, and kidneys. These are _____effects.

3. Marijuana causes intoxication much like alcohol. A physiological effect is _____. A phychological effect is _____.

4. _____ may completely derange an individual on first dose. This is a _____effect.

5. Sweating, dilated eyes, and stupor are symptoms caused by _____ in the _____ stage.

6. _____excite the individual and raise blood pressure but they do not cause _____ symptoms.

7. Marijuana makes it harder to make decisions. This is a _____ effect. There are _____ withdrawal symptoms.

8. The _____ depress, slow reactions, cause mental confusion and cause _____ symptoms.

## ANSWER KEY

1. LSD, physiological
2. Solvents, physiological
3. (student choices)
4. LSD, psychological
5. heroin, withdrawal
6. amphetamines, withdrawal
7. psychological, no
8. barbiturates, withdrawal

Teacher Information, Lesson 9

By drug abuse is meant the illegal self-administration of substances both medicinal and nonmedicinal. Most of these drugs have played a vital role in the advance of modern medicine. When used unscientifically, they adversely influence the structure and function of mind and body. They can become a threat to sanity and to life itself.

Amphetamines are sometimes called "speed," "pep pills," or "bennies." They are a stimulant to the central nervous system. They are often taken to ward off sleep. This can be dangerous, as the individual does not become aware of his fatigue until it overcomes him. He may black out. Amphetamines produce an unacceptable sensitivity to other medicines. Use of this drug causes the individual to become restless, nervous, and irritable. The pupils of the eyes dilate and the mouth becomes dry. There are palpitations and tremor of the hands. The individual is excitable and talkative; speech is unclear. With continued and increased use, there may develop an abnormal heart rhythm which can lead to heart attack. There is a loss of appetite followed by a loss in weight. Behavior becomes aggressive, thinking becomes disorganized, and there is mental disorder. While one is "hopped up," there are both auditory and visual hallucinations, delusions, and temporary mental derangement. There are suicidal tendencies and crimes may be committed, particularly if there is an abrupt withdrawal. Long-time users become unstable and may break down socially, intellectually, and emotionally. Serious psychotic states and personality disorders may result. Panic, shock, convulsions, and eventually death may follow.

Barbiturates are sometimes called "goof balls" or "candy." They are a depressant to the central nervous system. Mild unauthorized use affects the skeletal muscles and the heart muscle. Increased amounts lead to a condition resembling intoxication. The tongue becomes thick and speech is slurred. Vision is distorted. A loss of physical coordination, with a lack of balance and a staggering gait, develops. There follows a slowdown of reactions and responses. Judgment is impaired. The individual becomes confused and cannot concentrate. There is weak emotional control with a display of irritability, anger, quick temper, and combativeness. Heavy use and attempt at withdrawal brings about nervousness, headaches, nose twitching, tremor, insomnia, nausea, and increased discomfort. Cramps, fall in blood pressure, hallucinations, delirium, and convulsions may also develop. There may be sudden death.

Barbiturates combined with alcohol can be particularly lethal, since there is a very dangerous slowdown of body responses and reactions. The breathing center in the brain becomes paralyzed, and death can result. Overdoses of barbiturates are common, since the abuser easily forgets how much he has already consumed. Overdose leads to convulsion, coma, pneumonia, and death. More people die of poisoning from barbiturates than from any other drug.

Tranquilizers are much like barbiturates in that they calm the individual, but they do not produce sleep. Under the influence of tranquilizers, an individual may be in danger of falling. There can be motor incoordination and accidents. Extra danger results from the combination of barbiturates and alcohol. Psychologically, tranquilizers reduce tension and anxiety. They reduce disturbed behavior without upsetting mental functions as badly as do the barbiturates. Abuse causes aggressiveness. The individual may pick

fights and get in trouble with the law. Behavior is unpredictable. Upon sudden withdrawal of the tranquilizer, symptoms similar to those of barbiturate withdrawal may develop.

LSD is a hallucinogenic drug. It is the most dangerous of the abuse drugs. Even a single first dose can send the user on a long, long "trip." In addition, effects can return a week or month later without an additional dose. As little as 1/280,000 of an ounce (150 millionth of a gram) causes symptoms. LSD is colorless, odorless, and tasteless. It can be identified only by laboratory investigation. It is an extremely dangerous mind-affecting drug. Although it is being used experimentally, it has no medical use. It can cause serious reactions. It increases the pulse and heart rate and causes irregular breathing. It raises the temperature and the blood pressure. The pupils become dilated and the face may be either pale or flushed. There is a lack of appetite and nausea. Overstimulation to the senses causes color, sound, and vision to be distorted. Walls seem to move; colors become strong and appear in unusual patterns. Two strong conditions may be experienced at once, as happiness and sadness, or tension and relaxation. Space perception is distorted, and the individual thinks he can do impossible things, such as flying. Sense of time is lost. There are illusions and hallucinations, and consciousness is diminished. The individual feels that his creative ability and performance are improved; however, this has been disproved. Acute reactions may result in long-lasting illness. Along with illusions and hallucinations, there is a feeling of anxiety to the point of panic, severe depression, and suicidal thoughts. Thoughts can become so confused that the individual does not know where he is. Habitual use may bring about a dramatic

change in the user's system of values. Interest in work is lost. There is an objective loss in perception and in ability to concentrate. The individual becomes engulfed in his own sensations, and he may drop out of society. He may become paranoid. There is an unresolved psychosis and impulse towards violence and suicide. Brain damage may occur. Mothers who use LSD have given birth to malformed babies, some of whom have died soon after birth. Chromosomal breakage has been proved. It is the same type of break that occurs from ionizing radiation. Further research is investigating whether the breaks are long-term or short-term.

Volatile substances are organic solvents that cause serious harm when their concentrated fumes are inhaled. Some of these are airplane glue, benzine, carbon tetrachloride, paint thinner, gasoline, and lacquer. They act like a general anesthetic upon the body. Sniffing is engaged in by children as young as eight years. First effects upon the individual are a tingling sensation in the head and a feeling of exhilaration. Continued inhalation produces a state similar to alcoholic intoxication. There is euphoria, dizziness, staggering, and slurred speech. The individual may become irritable and act rashly, so that his actions may become dangerous. He may pick fights or attack people. He loses interest in normal activities. Habitual use of solvents may lead to damage to the liver, kidneys, and brain and to the destruction of bone marrow. Eventually it can result in stupor, coma, and death.

Marijuana is classified as a narcotic because it is controlled by the same laws that regulate narcotics. Chemically, however, it is a hallucinogen.

It enters the bloodstream and acts upon the brain and nervous system. Just how it produces its effects is not known. Neither is it known how the use of marijuana over a long period of time will affect the user. It will take time and research to find the answer. Statistics show that many heroin addicts started with marijuana. It is estimated that there are 2.3 million users in the United States. Marijuana is called "pot," "joint," and "reefer." Small amounts make the user feel excited and silly. Increased amounts cause intoxication. There is an increase in heart rate, and body temperature is lowered. The eyes become red, the appetite is stimulated, and blood sugar is lowered. There is a desire for sweets. Mucous membranes are inflamed and the body dehydrated. Perception is distorted. Colors seem brighter and hearing seems keener. The mood of the user may vary from joy, hilarity, and loudness to anxiety, depression, uneasiness, fear, and panic. Interference with thinking results. Increased amounts cause faulty judgment, and decisions become difficult. Time and distance become distorted. Reflexes become slower, and poor coordination is probable. The individual responds to suggestions and is highly unsteady and talkative. He may become violent. Excessive indulgence causes mental confusion, drowsiness, restlessness, disordered movements, hallucinations, and delusions. When the individual becomes used to marijuana, he may turn to something stronger.

Heroin, called "horse," is the narcotic that is the most abused. So drastic are the effects that it is never used as medicine. It depresses the nervous system and thereby influences all body activity. It causes a slowdown in circulation and respiration. Blood pressure is lowered; metabolism is decreased. Loss of appetite may result, with digestive disturbances, de-

hydration, and a loss in weight. Malnutrition, with associated fatigue and a general rundown condition, may become severe because the individual neglects his health. A feeling of euphoria gives temporary enjoyment. There is freedom from pain, a reduction of tension, and relief from fear and worry. Eventually the drug interferes with the individual's job and education. With continued use of heroin, an overpowering need for it is developed both physiologically and psychologically. The body screams for more of the drug to release the torture. The victim is "hooked." There is an overpowering need to continue the drug, and dosage is increased. Withdrawal characteristics appear. There are violent muscular spasms, yawning, sweating, and gooseflesh. Pupils dilate, and the eyes and nose run. Depressed areas of the body become hyperactive. Respiration, blood pressure, and temperature are increased. Metabolism speeds up. There are severe aches in the back of the legs, and hot and cold flashes. Vomiting, diarrhea, nervousness, sleeplessness, and an extreme feeling of desperation are manifested. Stupor and coma may follow and lead to death.

The following lists classify the effects of each drug into physiological, psychological, and withdrawal effects:

## AMPHETAMINES

### Physiological Effects

1. restlessness, nervousness, irritability, sleeplessness
2. palpitations, tremor of hands
3. abnormal heart rhythm, heart attacks
4. rise in blood pressure
5. dilation of pupils, dryness of the mouth
6. loss of apetite, loss of weight
7. unusual sensitivity to other drugs
8. shock, convulsions

### Psychological Effects

1. excitable, talkative manner
2. aggressive behavior
3. mental disorder, disorganized thinking
4. hallucinations, delusions
5. suicidal tendencies
6. crime when the individual is "hopped up"
7. panic

## BARBITURATES

### Physiological Effects

1. inducement of sleep
2. thickening of the tongue, slurring of speech
3. lack of physical coordination, lack of balance, falling, staggering gait
4. slowness of reactions and responses
5. distortion of vision
6. extreme fall in blood pressure
7. exhaustion
8. paralysis of the breathing centers

### Psychological Effects

1. anxiety, restlessness, quarrelsomeness
2. quick temper
3. unwise decisions, snap judgments, erratic behavior
4. mental confusion
5. hallucinations, delusions

Withdrawal Symptoms

1. adequate behavior only at first
2. increasing nervousness, anxiety, weakness, sleeplessness; muscle twitching; headaches
3. fall in blood pressure
4. convulsions
5. delirium, hallucinations
6. extreme agitation, mental confusion
7. coma
8. death

## TRANQUILIZERS

Physiological Effects

1. danger of falling
2. poor performance
3. muscular incoordination, accidents
4. added danger when mixed with alcohol

Psychological Effects

1. reduction of tension anc anxiety
2. reduction of disturbed behavior with less upset to mental functions than from the barbiturates
3. aggressiveness, trouble with the law
4. unpredictable behavior

## LSD

Physiological Effects

1. increase in pulse and heart rate
2. irregular breathing
3. rise in blood pressure
4. rise in temperature
5. dilation of the pupils
6. chills, cold and sweaty palms
7. face flushed or pale
8. nausea
9. lack of appetite
10. overstimulation of the senses so that color, sound, and vision are distorted
11. brain damage
12. chromosome damage

Psychological Effects

1. unresolved psychoses
2. panic, shock, disorientation
3. walls seeming to move, colors strong and in unusual patterns, distorted images
4. experiencing of two strong opposite conditions at once, such as happiness and sadness or tension and relaxation
5. loss of sense of time
6. loss of space perspective (thinks he can fly)
7. increased creative ability and improved performance not a result, although the user feels he is doing better
8. impaired concentration
9. impulse towards violence and suicide
10. hallucinations
11. illusions
12. panic
13. severe depression

## VOLATILE SUBSTANCES

Psychological Effects

1. intoxication much like alcohol
2. slurring of words, lack of muscular coordination
3. dizziness, ringing in ears
4. increase in amount of saliva
5. unpleasant breath
6. eye inflammation, double vision
7. irritation of nose and lung tissue
8. loss of weight and appetite
9. sick feeling
10. liver damage
11. brain damage
12. kidney damage
13. bone marrow destruction
14. unconsciousness
15. stupor
16. coma
17. death

Psychological Effects

1. euphoria
2. reckless abandon--urge to do foolish and dangerous things such as flying or fighting a train
3. loss of interest in normal activities
4. endangering of the lives of others
5. aggressiveness, resulting in possible robbery or murder

## MARIJUANA

Psychological Effects

1. rapid heart beat
2. fall in body temperature
3. reddening of the eyes
4. distortion of perception
5. perception of colors as brighter than they are
6. fall in blood sugar
7. stimulation of appetite
8. dehydration of the body
9. perception of hearing as keener than it is

Psychological Effects

1. varying of moods from joy, hilarity, loudness to anxiety, depression, uneasiness, panic, fear
2. difficulty in making decisions; faulty judgment
3. interference with reflexes and clear thinking
4. interference with coordination
5. increased response to suggestion
6. excitability often leading to violence

## NARCOTICS

Physiological Effects

1. depression of areas of brain and spinal cord
2. depression of center of respiration
3. reduction of hunger, thirst, sex drive
4. euphoria
5. reduction of pain
6. development of bad health, shortening of life span
7. constipation
8. temporary impotence and sterility
9. stupor
10. coma

Psychological Effects

1. reduction of tension, relief from fear and worry
2. stupor, dulling of reality
3. interference with job and education
4. possible trouble with family and the law

Withdrawal Effects

1. yawning, sweating, gooseflesh
2. running eyes and nose
3. violent muscular spasms
4. dilated eyes
5. vomiting, diarrhea
6. stupor, coma, death

MAJOR DRUGS AND SUBSTANCES

Narcotics

opium
heroin
morphine sulfate (Morphine)
codeine sulfate (Codeine Sulfate)
meperidine HCI (Demerol)
methadone

Depressants

alcohol
barbiturates
- sodium pentobarbital (Nembutal)
- secobarbital (Seconal Sodium)
- mephobarbital (Mebaral)
- phenobarbital (Luminal)

chloral hydrate (Noctec)

Tranquilizers

meprobamate (Miltown)
chlordiazepoxide HCI (Librium)
prochlorperazine (Compazine)
trifluoperazine HCI (Stelazine)

Hallucinogens

marijuana
LSD
DMT
mescaline
psilocybin

Stimulants

caffeine (coffee, Coca-Cola, No-doz)
nicotine
amphetamines
- Benzedrine
- dextroamphetamine sulfate (Dexedrine)
- Methedrine

cocaine

(Note: The names in parentheses are brand names.)

LESSON 10

CONCEPT: The use of drugs is one of the most difficult habits to break.

BEHAVIORAL OBJECTIVES: At the completion of this lesson the student will be able to--

1. classify drugs according to their potential in causing habituation, physical dependence, psychological dependence, tolerance, and withdrawal illness;
2. identify the type of personality that is vulnerable to drug abuse;
3. describe how the user of drugs can be identified.

## SURVEY

1. Why do some people take drugs?
2. Why do drugs cause various reactions in different people?
3. What kinds of dependency do drugs cause?
4. How does tolerance influence dependency?
5. What is the difference between habituation and psychological dependence?
6. Why does the withdrawal syndrome create a serious problem for one who wants to stop?
7. What are the characteristics which drug abusers can be identified?

## LEARNING ACTIVITIES

1. Make a list of reasons why responses of individuals to the use of drugs are not always the same.
2. Make a poster illustrating some phase of drug abuse.
3. Write a paragraph showing what kind of a personality may turn to the use of drugs.
4. Fill in the spaces with yes or no to indicate if each drug induces these conditions.

| Drug | Psychological Dependency | Physiological Dependency | Tolerance | Withdrawal Illness |
|---|---|---|---|---|
| Amphetamines | | | | |
| Barbiturates | | | | |
| Tranquilizers | | | | |
| LSD | | | | |
| Marijuana | | | | |
| Heroin | | | | |
| Solvents | | | | |
| Alcohol | | | | |
| Tobacco | | | | |

SURVEY

REFERENCES

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Florida State Dept. of Education, Alcohol... Narcotics Education, Tallahassee, Florida, 1967.

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VISUAL AIDS

Filmstrip and Record:

TEEN-AGERS AND DRUGS, Health Education Series, Part IX, Raytheon Learning Systems Co.



LEARNING ACTIVITIES

5. List ten general symptoms of abuse.

6. List four symptoms of abuse for each of the following: amphetamines, barbiturates, LSD, marijuana, heroin, solvents.

ASSESSMENT

A. Identify the statements as true or false.

1. Physical dependence and addiction are the same thing.

2. Habituation is more severe than psychological dependence.

3. Tolerance is part of psychological dependence.

4. The ills of society are sometimes given as reasons why individuals turn to drugs.

5. It is easy to distinguish a user of drugs.

6. All drugs cause addiction.

7. An individual looking for a thrill or a means to defy authority may take to drugs.

8. Drug abusers may sometimes be identified by odor on breath or clothes.

9. The illness accompanying withdrawal is a result of the body's physical need for the drug.

10. A user of drugs may have poor self-discipline and poor attendance at school.

REFERENCES

ASSESSMENT

B. Match the items in the two columns.

| | | | |
|---|---|---|---|
| 1. | Barbiturates | a. | No tolerance developed |
| 2. | Alcohol | b. | May develop psychological dependence |
| 3. | Marijuana | c. | Socially accepted but has withdrawal symptoms |
| 4. | Abuse of any drug | d. | Develop physical dependency |

ANSWER KEY

A. 1 - T, 2 - F, 3 - F, 4 - T, 5 - F, 6 - F, 7 - T, 8 - T, 9 - T, 10 - T

B. 1 - d, 2 - c, 3 - a, 4 - b

Teacher Information, Lesson 10

Many substances when properly used are beneficial to mankind but can become deadly when they are abused. The effects of drugs on individuals vary in accordance with the kind of drug, the strength and purity of the drug, and the response of the individual to the drug. There is no way of judging a black market drug. The physiological and psychological makeup of each individual is involved. Many drugs have drastic side effects. The following terms are used to indicate the effect of abused drugs and substances upon the individual: habituation, addiction, psychological dependence, physiological dependence, tolerance, and withdrawal sickness.

Habituation is a general term that applies to the effect of a repeated use of a drug or substance. If the drug continues to produce the effect without the need to increase the dosage, dependency is not developed. If the body reaction is such that no effect is felt from continued use of the drug, a tolerance to the drug has developed. The result of such a tolerance is an increase of dosage or change of substance. Thus, habituation can be expressed in two ways: (1) the continued use without the need for increase in dosage and (2) tolerance, which requires increased dosage. Tolerance is developed by amphetamines, barbiturates, narcotics, LSD, alcohol, and nicotine. No tolerance is reached in the use of marijuana and tranquilizers.

Dependence is a general term used to indicate a physical and/or psychological need for the substance. Each drug has its own type of dependence, so the state of dependence is further classified in accordance with the type of

drug involved, such as barbiturate dependence. Dependence can be psychological, when the substance satisfies an emotional need. This can be so compulsive that it is harder to cure than physical dependence. Physical dependence involves the physiological adaptation of the body to the drug. When deprived of the drug, the body reacts with withdrawal illness. As the body adjusts to the substance, the drug dosage must be continually increased in order to maintain the same effect. This ever-increasing need is the result of a body tolerance. Tolerance and withdrawal are characteristics of physical dependence. This terminology is replacing the older term addiction. Psychological dependence is developed by all the drugs on the list. Physical dependency with withdrawal illness is developed by barbiturates, narcotics, and alcohol.

It is extremely difficult to identify drug abusers. There are, however, certain symptoms that can assist in the problem. They are presented in the article included in the section of the Appendix entitled "Drug Abuse: Problems of Identification," Department of Police, City of Miami, Florida.

Drugs do not cause addiction, but human weaknesses do. Physical dependency is usually a symptom of personal maladjustment rather than disease in its own right. The problem may be of physiological, psychological, or sociological origin. Sometimes people who are well adjusted abuse a drug the doctor prescribes for treatment and become involved.

Most individuals who are abusers begin by using these substances as a crutch to help solve problems. Following are some characteristics which can be involved: he is an unhappy person who feels insecure; he daydreams; he feels anxiety, tensions, insomnia, and emotional stress; he is antisocial; he drifts away from school and family, and associates with other abusers; he is immature but does not recognize himself as such; he is easily frustrated, has few interests, and cannot concentrate; drugs relieve his fatigue, relax him, and change his mood; he loses his inhibitions and feels he has discovered himself. These are emotionally disturbed and socially maladjusted personalities. Slum conditions often predispose the individual, but the economically deprived are not alone. Individuals of middle and upper classes can also be involved.

Many people begin taking drugs on a spree basis; new sensations are sought. The individual believes that indulgence makes him more creative and gives him insight into himself. He often is defiant of parents, authority, and the accepted ways of performing. He feels no obligation to conform to standards of society. He seeks status in a peer group. Sometimes a person with extremely high aspirations finds his self-esteem inpaired. His environment becomes difficult to cope with, and he becomes involved. People with these types of characteristics are said to be addiction-prone. Even after they are cured they have a great desire to go back to the drug, and they often do.

## LESSON 11

CONCEPT: A concerned person takes proper care of his body at all times.

BEHAVIORAL OBJECTIVE: Upon completion of this lesson the student will--

1. be aware of the need to rehabilitate the user;
2. identify the characteristics of a well-ordered life.

### SURVEY

1. How has the attitude toward addiction changed over the years?
2. In what ways does society try to help addicts?
3. How are marijuana and alcohol alike? How do they differ?
4. How do drugs influence driving?
5. How does advertising influence the drug problem?
6. What attitudes and procedures help the concerned individual to adjust to a good way of life?

### LEARNING ACTIVITIES

1. Compare the present attitude toward the treatment of addicts with that of the past attitude.
2. Assess the following statement: Use of marijuana should be legalized.
3. Weigh the possible effects of arrest and conviction for a felony on an individual's future life.
4. Construct a list of adverse effects of use of drugs upon driving. Support the list by associating each item with drugs that produce the effect involved.
5. Evaluate drug advertisements and their influence on drug abuse.
6. Analyze some positive approaches towards effective living.

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## VISUAL AIDS

Films:

NARCOTICS: WHY NOT?
THE LOSERS
HOOKED

Filmstrips:

TEEN-AGERS AND DRUGS IX
TEEN-AGERS AND DRUGS X
(RAYTHEON LEARNING SERIES)

## ASSESSMENT

A. Identify the statements as true or false.

1. Drug addiction is an illness that should have professional treatment.

2. Narcotics Anonymous and Alcoholics Anonymous are organizations that treat the addict.

3. Methadone is a nonnarcotic drug used by doctors as a substitute drug in treating narcotic addicts.

4. Job placement and social adjustment, essential parts of rehabilitation, are difficult adjustments for the addict to accomplish.

5. Long-term scientific investigations on effects of marijuana have been carried out.

6. Conviction on a felony charge affects an individual's whole future life.

7. Advertising presents the desirability of its products through suggestion.

B. Write an essay identifying ways of living that predispose an individual toward a well-adjusted personality.

## ANSWER KEY

A. 1 - T
2 - F
3 - F
4 - T
5 - F
6 - T
7 - T

B. Presentations will vary.

Teacher Information, Lesson 11

A well-informed individual knows that the addict is ill and needs assistance in many ways. Withdrawal must be accomplished under medical supervision. Rehabilitation into the life of the community is necessary. The following are agencies and organizations that help the addicted:

Narcotics Anonymous and Alcoholics Anonymous. These are similar organizations. Members meet and discuss their problems. They try to encourage those who need help to seek proper treatment.

Synanon. This is a group organized like a family. Group therapy is used to help to keep the addict away from drugs.

Daytop Lodge. This is an organization which treats addicts on probation and tries to help them adjust to society.

Methadone Clinics. These clinics are for the narcotic abuser. Methadone is substituted for heroin as it is a less harmful narcotic. The individual is helped in obtaining and holding a job and in making social adjustments.

Halfway Houses. These are houses where an addict can live as he learns to adjust to society.

State Clinics. Clinics exist in several states; they have programs to help cure and adjust the individual.

Federal Hospitals. These hospitals operate at Lexington, Kentucky, and at Fort Worth, Texas. They are drug research institutions that serve the addicts.

Withdrawal is extremely painful and is greatly feared. It takes months; it must be accompanied and followed by rehabilitation into family and community life. There must be a realization that drugs which are abused cure nothing. When the effect wears off, the problem is still there. There is no chemical answer to life's problems.

There is great concern today about marijuana. Some say that, since marijuana develops neither physical dependency nor tolerance, it is no more harmful than alcohol and should be permitted. Both of these substances are intoxicants. Marijuana's effects upon behavior are much like those of alcohol. Figures show that alcohol is involved in a great percentage of accidents. With marijuana there is an extra involvement concerning accidents in that there is a distortion of concepts of time and space which makes driving under its influence a special hazard. Alcohol brings about sociological and psychological effects that are undesirable to the individual and the community. Families are disrupted, jobs are lost, money is wrongly spent. Alcohol is a problem drug in many respects. Should another substance be permitted that can cause just as much hardship, sadness, ill-health, and economic problems merely because its evils are no worse? Or is marijuana worse? Alcohol is not imbibed primarily for the purpose of becoming intoxicated. When marijuana is used, there is no thought of moderation. An individual indulges in it for the sole purpose of becoming "high" and, therefore, the more advanced dangerous stages are more likely to occur. The individual cannot control the reaction. The strength

of an alcoholic drink and its effects upon a given individual are known. Since there is no way of knowing the strength and purity of marijuana, its effects cannot be judged. Today's laws against marijuana and the weak potency of the drug have masked its dangers. The countries of the world are giving recognition to the fact that it is detrimental to society.

Only the short-term effects of marijuana are known today. There have been no long-term investigations up to this time to judge what dire effects upon body structure and function may result. It took centuries before the real hazards of tobacco were discovered. Long-term effects of marijuana could turn out the same. Shall youth be free to use it before the facts are known?

The concerned student realizes the impact of the law upon his future. Commitment on a felony charge has a life-long effect upon the individual. He finds it more difficult to get a job both in private industries and governmental agencies. Since he is on probation, he is strictly supervised. Wherever he lives, he must register as a drug addict. He may lose the right to vote, be denied a passport, and be prohibited from entering into legal contracts. Thus his whole life is influenced. The risk of being caught for drug abuse is high.

A conscientious person desires to drive safely and expertly. He realizes that traffic accident reports prove that drugs are a hazard to defensive driving. Any drug that affects the central nervous system affects driving.

Any of the following conditions are detrimental to safe driving and are to be avoided:

1. drowsiness, fatigue
2. delay in reaction time
3. poor coordination
4. faulty judgment
5. interference with vision
6. confusion
7. irritability
8. shakiness, dizziness
9. diminished consciousness
10. aggressiveness, combativeness
11. hallucinations
12. nausea, vomiting

When the effects of the drugs and substances studied are checked against this list, it is discovered that all of them are involved. Alcohol, tobacco, amphetamines, barbiturates, LSD, marijuana, heroin, and solvents all produce one or many dangerous conditions in terms of driving.

The concerned individual evaluates drug advertising for himself. He knows that advertising is a selling procedure, pitched to influence by appealing to the desires and weaknesses of the public. This appeal, especially in cigarette advertising, is made by promising the individual that by merely using the product he will attain certain characteristics or status which modern society holds in esteem.

The concerned student realizes that good health is essential to good living. He realizes the dangers of addiction and the difficulty of a cure. He realizes that there are dangers from malnutrition, from possibilities of infection, from unsterilized hypodermic needles, from the deterioration of the organs and systems of his body, from the destruction of the sanity of his mind. There are many implications involved.

There are ways of living that predispose the individual to a proper path. The concerned student will take these steps:

1. take care of himself and take only drugs that are legally prescribed and obtained;
2. realize it is not smart to fool with drugs and not let any one convince him they are harmless;
3. support the laws;
4. select friends that have desirable standards and ideals;
5. find healthy recreation and meaningful activities;
6. become actively involved in community problems and share healthy, constructive experiences;
7. help isolated individuals to become part of a good group.

A well-adjusted personality is the best defense against drug abuse. Such a person faces life's problems squarely.

POSTTEST

A. Match the items in the two columns to describe the effects of drugs and substances on the body.

| | | | |
|---|---|---|---|
| ____1. | stimulants | a. | slow down activity |
| ____2. | depressants | b. | induce calmness |
| ____3. | narcotics | c. | speed up activity |
| ____4. | hallucinogens | d. | produce stupor or sense of well-being |
| ____5. | tranquilizers | e. | develop toxic reaction |
| ____6. | substances | f. | cause distorted images |

B. Match the items in the two columns to show the characteristics of diseases frequently found in smokers.

| | | | |
|---|---|---|---|
| ____1. | lung cancer | a. | Alveoli of lungs lose elasticity and are destroyed. |
| ____2. | Buerger's disease | b. | Constriction of coronary artery impairs heart muscle. |
| ____3. | emphysema | c. | Lesions develop in lining of area. |
| ____4. | coronary heart disease | d. | Persistent cough develops, with spitting up of blood. |
| ____5. | stomach ulcer | e. | Circulation in extremities is disrupted and destroyed. |

C. Match the items in the following columns to show the meaning of terms related to drug and substance abuse.

| | | | |
|---|---|---|---|
| ____1. | tolerance | a. | physiological craving |
| ____2. | physical dependency | b. | discontinued use |
| ____3. | psychological dependency | c. | loss of effect unless the dosage is increased |
| ____4. | withdrawal | d. | emotional craving |

D. Choose the item which best completes the statement.

____1. Nicotine is--

a. a product whose effects are not known.

b. safe if a filter is used.

c. a destructive poison.

d. harmless if you don't inhale.

____2. Smoking is a special hazard to teenagers because it--

a. reduces the appetite.

b. depresses the central nervous system.

c. increases the ability to coordinate.

d. causes insomnia.

____3. Alcohol acts to--

a. stimulate thought.

b. depress the central nervous system.

c. increase the ability to coordinate.

d. cause insomnia.

E. Write true or false next to the following statements.

____1. History tells us that drugs have been used for many centuries.

____2. The oldest drugs known to man are narcotics.

____3. The problem of addiction caused by opiates was first discovered in the United States during World War I.

____4. Modern drugs may be synthetic as well as natural.

____5. A pharmacist may manufacture and prescribe drugs.

____6. Self diagnosis is very effective and saves money for the individual.

____7. Nonprescription drugs are illegal.

____8. Many bacterial and viral diseases have been conquered through the use of drugs.

____9. The Federal Trade Commission helps keep drugs safe.

___10. Alcohol, when abused, creates physiological dependence.

___11. Today a drug addict is considered ill.

___12. A person with problems of adjustment to society will never turn to drugs.

___13. Driving under the influence of drugs is dangerous.

## ANSWER KEY

A. 1 - c
2 - a
3 - d
4 - f
5 - b
6 - e

B. 1 - d
2 - e
3 - a
4 - b
5 - c

C. 1 - c
2 - a
3 - d
4 - b

D. 1 - c
2 - a
3 - b

E. 1 - T
2 - F
3 - F
4 - T
5 - F
6 - F
7 - F
8 - T
9 - T
10 - T
11 - T
12 - F
13 - T

# APPENDIX

DEPARTMENT OF POLICE CITY OF MIAMI, FLORIDA

# DRUG ABUSE

## PROBLEMS OF IDENTIFICATION

It is important that teachers and parents recognize the common symptoms of drug abuse, since many potential "hard-core" addicts can be rehabilitated if their involvement in drug abuse is detected in its early stages.

### 1. COMMON SYMPTOMS OF DRUG ABUSE

a. Changes in school attendance, discipline, and grades

b. Change in the character of homework turned in

c. Unusual flare-ups or outbreaks of temper

d. Poor physical appearance

e. Furtive behavior regarding drugs and possessions

f. Wearing of sunglasses at inappropriate times to hide dilated or constricted pupils

g. Wearing of long-sleeved shirts constantly to hide needle marks

h. Association with known drug abusers

i. Borrowing of money from students to purchase drugs

j. Stealing of small items from school

k. Discovery of the student in odd places during the day, such as closets, storage rooms, etc., to take drugs

2. MANIFESTATIONS OF SPECIFIC DRUGS

a. THE SOLVENT SNIFFER

(1) Odor of substance inhaled on breath and clothes

(2) Excess nasal secretions, watering of the eyes

(3) Poor muscular control, drowsiness, or unconsciousness

(4) Presence of plastic or paper bags or rags containing solvents

b. THE DEPRESSANT ABUSER (BARBITURATES - "GOOFBALLS")

(1) Symptoms of alcohol intoxication with one important exception--no odor of alcohol on the breath

(2) Staggering or stumbling in classrooms or halls

(3) Sleeping in class

(4) Lack of interest in school activities

(5) Appearance of drowsiness and disorientation

c. THE STIMULANT ABUSER (AMPHETAMINES - "BENNIES")

(1) Excess activity--student is irritable, argumentative, nervous, and has difficulty sitting still in classrooms.

(2) Pupils are dilated.

(3) Mouth and nose are dry, with bad breath, causing user to lick his lips frequently and rub and scratch his nose.

(4) He may be a chain smoker.

(5) He goes long periods without eating or sleeping.

d. THE NARCOTIC ABUSER (HEROIN - DEMEROL - MORPHINE, ETC.)

These individuals are not frequently seen in school. They usually begin by drinking paregoric or cough medicines containing codeine. The presence of empty bottles in wastebaskets or on school grounds is a clue.

(1) Inhaling heroin in powder form leaves traces of white powder around the nostrils, causing redness and rawness.

(2) Injecting heroin leaves scars on the inner surface of the arms and elbows. ("Mainlining") This causes the student to wear long-sleeved shirts most of the time.

(3) Users often leave syringes, bent spoons, cotton and needles in lockers; this is a telltale sign of an addict.

(4) In the classroom the pupil is lethargic, drowsy. His pupils are constricted and fail to respond to light.

e. THE MARIJUANA ABUSER

It is difficult to recognize a marijuana abuser unless he is under the influence of the drug at the time he is being observed.

(1) In the early stages student may appear animated and hysterical, with rapid, loud talking and bursts of laughter.

(2) In the later stages the student is sleepy or stuporous.

(3) Depth perception is distorted, making driving dangerous.

NOTE: Marijuana cigarettes are rolled in a double thickness of brown or off-white cigarette paper. These cigarettes are smaller than a regular cigarette, with the paper twisted or tucked in both ends and with content that is greener in color than regular tobacco. The odor of burning marijuana resembles that of burning weeds or rope. The cigarettes are referred to as "reefers, sticks, Texas tea, pot, rope, Mary Jane, loco weed, jive, grass, hemp, hay."

f. THE HALLUCINOGEN ABUSER

It is unlikely that students who use LSD will do so in the school setting, since these drugs are usually used in a group situation under special conditions.

(1) Users sit or recline quietly in a dream or trance-like state.

(2) Users may become fearful and experience a degree of terror which makes them attempt to escape from the group.

(3) The drug primarily affects the central nervous system, producing changes in mood and behavior.

(4) Perceptual changes involve senses of sight, hearing, touch, body-image and time.

NOTE: The drug is odorless, tasteless, and colorless and may be found in the form of impregnated sugar cubes, cookies, or crackers. LSD is usually taken orally but may be injected. It is imported into South Florida in ampules or clear blue liquid.

Drug Abuse: Resource Persons Guide

(Revised March 1970)

| | |
|---|---|
| Dade County Medical Association - Speaker's Bureau | 371-2601 |
| Dade County Public Safety Department | 377-7834 |
| Dan Danforth, Drug Abuse Foundation, Boca Raton | 1-391-5290 |
| Rev. Fred Harrison, Christian Community Service | 377-0716 |
| Ben Saks, S. E. Florida Pharmaceutical Assn. | 642-1638 |
| Al Sepe, Executive Assistant to State Attorney | 371-7671 |
| Rev. Denver Smoot, Turning Point | 688-0923 |
| U. S. Bureau of Narcotics and Dangerous Drugs | 350-4241 |
| University of Miami Law School - Speaker's Bureau | 284-2392 |

## RECOMMENDED READINGS

## PLACED IN EVERY SCHOOL BY SPECIAL HEALTH PROGRAMS


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U. S. Department of Health, Education and Welfare, Narcotics: Some Questions and Answers, Public Health Service Publication No. 1827, U. S. Government Printing Office, 1968-0-307-730, 1968.

U. S. Department of Health, Education and Welfare, The Up and Down Drugs: Amphetamines and Barbiturates, Public Health Service Publication No. 1830, U. S. Government Printing Office, 1968-0-307-733, 1968.

## RECOMMENDED FILMS AND FILMSTRIPS

### AUDIO-VISUAL SERVICES, DADE COUNTY SCHOOLS*

Films:

| | | | |
|---|---|---|---|
| BENNIES AND GOOFBALLS | 20' BW | JST | 1-13529 |
| HOOKED | 20' BW | JST | 1-13216 |
| LSD: INSIGHT OR INSANITY | 28' C | JS | 1-31731 |
| THE LOSERS | 31' BW | JS | 1-31716 |
| MARIJUANA | 34' C | JS | 1-31743 |
| NARCOTICS, PIT OF DESPAIR | 28' C | EJST | 1-31609 |

Filmstrips:

DRUGS (Set of ten Filmstrips) - Raytheon. One set in each district office.

- INTRODUCTION
- BARBITURATES AND AMPHETAMINES (1)
- BARBITURATES AND AMPHETAMINES (2)
- MARIJUANA (1)
- MARIJUANA (2)
- LSD AND LSD-TYPE DRUGS (1)
- LSD AND LSD-TYPE DRUGS (2)
- NARCOTICS
- TEENAGERS AND DRUGS (1)
- TEENAGERS AND DRUGS (2)

DRUGS IN OUR SOCIETY, Cathedral Filmstrips.

*For use by Dade County Schools

## GLOSSARY

Acid - LSD, Lysergic Acid Diethylamide

Addiction - An overpowering desire or need to continue taking a drug and to obtain it by any means

Alcohol - A type of beverage that influences the central nervous system and acts as a sedative

Alcoholism - A stage of physiological and psychological dependence caused by chronic use of alcohol

Addict - A person who has become emotionally and physically dependent upon a habit

Amphetamine - A drug that acts as a stimulant to the central nervous system

Barbiturate - A substance that acts as a depressant to the central nervous system

Bennies - Amphetamines

Buerger's disease - A disease of the circulatory system that constricts the vessels of the arms and legs and eventually cuts off circulation

Cancer - A disease characterized by an abnormal growth of cells

Candy - Barbiturates

Carcinogens - Substances that produce cancer

Cirrhosis - Cancer of the liver

Delirium tremens - A disease of alcoholic addiction, with mental derangement and hallucinations

Dependency - A state arising from repeated use of a drug on a periodic or continuous basis

Depressant - A substance that slows down activities of the body

Drug - A substance other than food that affects the structure and function of the body

Drug abuse - The illegal self-administration of substance both medical and nonmedicinal

Emphysema - A disease in which the alveoli of the lungs distend; as they lose their elasticity the walls rupture and several alveoli become one; inspiration and expiration become inadequate

Goof balls - Barbiturates

Euphoria - A feeling of well-being

Habituation - The continued use of a drug without actual addiction

Hallucinogen - A drug that produces sensations that are distorted in space, time, color, and sound

Horse - Heroin

Hooked - Addicted

Joint - A marijuana cigarette

Karsakoff psychosis - A mental illness resulting in confusion and poor memory caused by alcoholic addiction

LSD - A hallucinogenic drug

Marijuana - A hallucinogenic drug

Narcotic - A drug that tends to deaden the senses and that, if taken frequently, may cause addiction

Nicotine - An extremely poisonous liquid that acts as a stimulant and an irritant

Nonprescription drugs - Legally packaged drugs which are sold over the counter

Pep pills - Amphetamines

Physiological dependency - A state wherein the body develops a continuing need for a substance, and withdrawal symptoms occur if the drug is denied

Polyneuritis - a disease of the nervous system which may paralyze the hands and feet

Pot - Marijuana

Prescription drugs - Those prescribed by properly trained and licensed individuals

Psychological dependence - The satisfaction of an emotional need through the use of a substance

Psychosis - A severe mental disturbance

Reefer - Marijuana cigarette

Side effects - The less pronounced effects of a drug; usually annoying, but may be serious

Speed - Any stimulant, especially methamphetamine

Stimulant - A substance that speeds up activities of the body

Tolerance - The loss of effect of a drug so that the amount taken must be

continually increased to get the same effect, or a change in the drug must be made

Tranquilizer - A type of drug that calms and relieves tension but does not cause sleep

Trip - The drug experience

Volatile substance - A solvent that causes serious harm when it is inhaled

Warnick's syndrome - A disease caused by alcoholic addiction which dulls the mind and causes brain hemorrhage, poor muscular coordination, and paralysis of eye muscles

Withdrawal sickness - The physical stress that results when a drug supply is cut off

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